EPA Region 4

US EPA Region 4 and
US EPA Office of Research and Development

Present the

Environmental Research Seminar

US EPA , 61 Forsyth St., SW
Atlanta, GA
September 10, 2003

— Free Registration —
Information Inside

Bringing US EPA STAR (Science To Achieve Results) Grant Recipients' Research to State, Federal and Tribal Environmental Programs in the Southeast.

Seminar Overview

On September 10, 2003, twelve EPA Science to Achieve Results (STAR) grantees will present the results of their research to federal, state, and local government environmental and health professionals within Region 4. STAR funds cutting-edge environmental research projects nationwide, with many focusing on specific needs of the regions. Out of the hundreds of possible choices, Region 4 chose topics related to air quality, drinking water, asthma, and other important issues related to work that is ongoing in the region. State and local government environmental professionals have also been invited to attend this seminar, giving them and Region 4 a unique opportunity to learn about a variety of STAR research projects.

Each hour, attendees can choose from two speaker sessions. Don't miss this unique opportunity to hear from these twelve respected researchers and experts. Learn how their discoveries may have an impact on environmental science and policy making, your environmental program, your project, your state and your community.

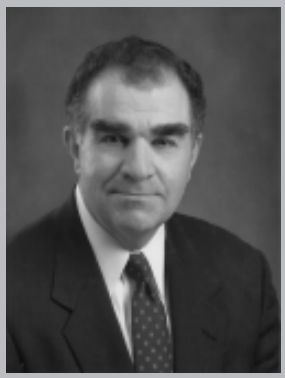
Who Should Attend

Speakers and research projects were specifically selected to address the needs and interests of federal, state, and tribal environmental employees. The purpose of this seminar is to educate and engage discussion between researchers and scientists from federal, state and tribal environmental programs on the latest state of the art in environmental research. The seminar also will give researchers in Region 4 the opportunity to discuss their research in the context of US EPA environmental science needs and priorities.

Welcome!

From Conference Cosponsors and Guest Speakers

We take great pride in the fact that within the eight states in Region 4, there are numerous institutions and individuals who are nationally and internationally recognized for the excellence of their work in environmental science and research. Hosting this important seminar, which allows government scientists, program managers, and policy makers to learn from these premiere environmental researchers, is a privilege for us, and I hope you will join us.



J. I. Palmer, Jr.
Regional Administrator
US EPA

This workshop gives you the opportunity to interact with some of the area's leading scientists conducting research on issues of critical importance to your region. The STAR and EPSCoR grantees are an important part of EPA's research program and provide us with the nation's best scientists and engineers from both academic and nonprofit research centers. Please join us at this special event.

Dr. Paul Gilman
EPA Science Advisor and Assistant Administrator
Office of Research and Development

Scientific research is one of the most powerful tools we have for understanding and protecting our environment. This workshop will give you an opportunity to hear and interact with some of the best environmental scientists and engineers in your region. Our STAR program is proud of the work these researchers have done. I hope you will join us in this special event to open the lines of communication between research and your region.

John C. Puzak
Acting Director
National Center for Environmental Research

Agenda at a Glance

8:30 - 9:00	Check-in
9:00 - 9:10	Beth Walls, *ORD Lead Region Coordinator* *US EPA Region 4*
9:10 - 9:20	J. I. Palmer, Jr., *Regional Administrator* *US EPA Region 4*
9:20 - 9:45	Dr. Paul Gilman, *US EPA Science Advisor* *Assistant Administrator* *Office of Research and Development* *US EPA*

Note: there is a 10 min. break between each session

9:45 - 10:00	Morning Break	
10:00 - 10:50	Sessions 1 & 2	Gerking or Tolbert
11:00 - 11:50	Sessions 3 & 4	Ringwood or Meyer
12:00 - 1:00	Lunch (on your own)	
1:00 - 1:50	Sessions 5 & 6	Overmyer or Raymer
2:00 - 2:50	Sessions 7 & 8	Bell or Gottfried
3:00 - 3:50	Sessions 9 & 10	Karanfil or Baker
4:00 - 4:50	Sessions 11 & 12	Weinberg or Vasu
5:00	Adjourn	

10:00 - 10:50 Session 1 & 2 Gerking or Tolbert

Session 1
Shelby Gerking, *Galloway Professor*
Department of Economics
University of Central Florida

Environmental Risks to Children's Health: Parent's Risk Beliefs, Protective Behavior, and Willingness to Pay

This research examines risk beliefs and willingness to pay issues by analyzing decisions parents make concerning their own health, the health of their children, and the health of others outside their immediate family. The research results are expected to provide direct evidence on both the absolute and relative valuation of child and adult health, on the formation of parental beliefs about risks to their own and their children's health, and on the determinants of risk-related behavior.

Session 2
Dr. Paige E. Tolbert, *Associate Professor*
Department of Environmental and Occupational Health
Rollins School of Public Health
Emory University

Air Quality in Atlanta: Urban Air Quality and Hospital Emergency Room Visits

The Study of Particles and Health in Atlanta (SOPHIA), is a time-series investigation of cardiac and respiratory emergency department (ED) visits in relation to daily measures of air quality in Atlanta, and includes detailed measurements of particulate matter (PM) components being conducted at the station being operated for the Aerosol Research and Inhalation Epidemiology Study (ARIES). Under our STAR grant, outcome data through 2002 are being obtained from the 31 hospitals participating in the study. With over a million ED visits per year, this study may be the largest study of its type to date, providing a powerful opportunity to address multi-pollutant questions.

11:00 - 11:50 Session 3 & 4 Ringwood or Meyer

Session 3
Dr. Amy H. Ringwood, *Associate Marine Scientist*
Marine Resource Research Institute
Charleston, South Carolina

Southeast Estuaries: Metal Bioavailability and Sediment Quality Measures

Toxicity and uptake of metals in estuarine sediments were studied using bivalves (oysters and clams) in laboratory and on-site settings. We evaluated the relationships between bivalve responses and sediment metals, and included other factors such as the presence of sulfides, grain size, salinity, and pH, that could affect bivalves and benthic communities. The quality of sediments in estuarine systems, the potential for degradation of these essential habitats, as well as ways to minimize human health risks will be considered.

Session 4
Dr. Peter B. Meyer, *Professor*
Department of Urban Policy & Economics
University of Louisville

Brownfields Real Estate Development: Market-based Incentives

This project examines the relative importance of different Market-based Mechanisms and other Incentives (MM&I) in inducing developers to invest in the remediation and reuse of previously used and potentially contaminated urban sites such as brownfields. This study attempts to determine the relative value placed by developers on three dominant real estate market incentives: liability relief, regulatory flexibility, and direct financial aid. Surveys asking developers and state/local governmental officials to choose between projects with different mixes of incentives are being used to derive actual dollar values for the different incentives.

12:00 - 1:00 Lunch (on your own)

FREE! Attendee Registration for US EPA's Environmental Research Seminar

All information must be filled out completely. One name per form. Please make additional copies as needed. Registration is necessary as seating is limited. Do not duplicate this form by mail if you have already registered online or by fax. For more information on this seminar contact Beth Walls at 404-562-8309 or Estella Waldman at 202-564-6836

* Please register no later than September 4, 2003

FAX
1-404-562-8269

On-Line Registration
www.epa.gov/region4/ers/index.htm

MAIL
Attn: Beth Walls
US EPA Region 4
61 Forsyth Street, S.W.
Atlanta, Georgia 30303-8960

Name _____

Title _____

Organization _____

Street _____

City _____ State _____ Zip _____ Country _____

Phone _____ Fax _____ Email _____

Please check the boxes for the Sessions you wish to attend:

- ❑ Session 1 Environmental Risks to Children's Health: Parent's Risk Beliefs, Protective Behavior, & Willingness to Pay
- or
- ❑ Session 2 Air Quality in Atlanta: Urban Air Quality and Hospital Emergency Room Visits

- ❑ Session 3 Southeast Estuaries: Metal Bioavailability and Sediment Quality Measures
- or
- ❑ Session 4 Brownfields Real Estate Development: Market-based Incentives

- ❑ Session 5 Lawncare Fertilizer/Herbicides: Urban Streams Impacts
- or
- ❑ Session 6 Exposure to Pesticides: Health Impacts on Children of Different Ages

- ❑ Session 7 Public Access to Air Quality Data: Timely Air Quality Information in Birmingham, Alabama
- or
- ❑ Session 8 Modeling Forest Change in the Southeast: Environmental and Social Impacts

- ❑ Session 9 Activated Carbon Surfaces: Tailoring for Water, Wastewater and Hazardous Waste Treatment
- or
- ❑ Session 10 Exotic Mussel Invades the Southeast: Biopollution by the Green Mussel, *Perna Viridis*

- ❑ Session 11 Downstream Impacts from Pharmaceutical Drugs and By-products: Impacts on Drinking Water Treatment Facilities
- or
- ❑ Session 12 Evaluating the Dissemination and Impact of Toxics Release Inventory Data

1:00 - 1:50	Session 5 & 6	Overmyer or Raymer

Session 5
Dr. Jay Overmyer, *Assistant Research Scientist*
Department of Entomology
University of Georgia

Lawncare Fertilizer/Herbicide: Urban Streams Impacts

This research integrated physical, ecological, toxicological and social sciences to assess the impacts of residential lawn care chemicals on aquatic ecosystems in an Atlanta suburb. Data gathered consisted of water quality measurements, analysis of water for nutrients and pesticides, and analysis of sediments for metals and pesticides (Physical); assessments of leaf litter breakdown and the macroinvertebrate community in the streams (Ecological); toxicological biomarkers from clams deployed in the streams and laboratory toxicity tests with pesticides commonly detected (Toxicological); interviews with homeowners about their lawn care practices and beliefs (Social). This presentation will summarize the results of the investigation to date, and evaluate relationships among data gathered from the different disciplines in reference to lawn care chemicals and their uses.

Session 6
Dr. James H. Raymer, *Program Director*
Health Directed Exposure Research
RTI International

Exposure to Pesticides: Health Impacts on Children of Different Ages

Recent studies have shown that there can be differences in the exposures to environmental pollutants experienced by children and adults in similar environments. These differences are derived from a number of factors including activities, diet, routes of exposure, and differences in the way children metabolize and excrete pollutants. This study examines both exposure to various pesticides and the resulting doses experienced by children of different ages and adults sampled from both rural and urban homes.

2:00 - 2:50	Session 7 & 8	Bell or Gottfried

Session 7
Samuel L. Bell, *Meteorologist*
Environmental Health Services
Jefferson County Department of Health
Birminham, Alabama

Public Access to Air Quality Data: Timely Air Quality Information in Birminham, Alabama

This EMPACT-funded project is aimed at enhancement of the local air quality monitoring, management, and public outreach program. It is a partnership among the Jefferson County Department of Health (leads the local monitoring and public outreach activities); the Alabama Department of Environmental Management (ADEM)(user of the generated information); and, the University of Alabama in Huntsville (UAH) and the MCNC North Carolina Supercomputer Center (both in charge of the project's science components and informational/ graphical products made available to ADEM and to the public on a daily basis). EMPACT Birmingham is leading to an on-going, locally-driven partnership program as well as an innovative technology-transfer process which may be replicated in other metro areas.

Session 8
Dr. Robert Gottfried, *Professor*
Dr. Doug Williams (Co-Author), *Professor*
Department of Economics
The University of the South

Modeling Forest Change in the Southeast: Environmental and Social Impacts

Using remote sensing and GIS technology, the Sewanee Landscape Laboratory recently mapped and quantified changes in land use/land cover for the southern Cumberland Plateau. We are now developing a socioeconomic model of change in land use/land cover for the period 1981-2000. We will integrate this model with bird, amphibian, and water quality landscape models to understand the socioeconomic processes bringing environmental change in the region. The study assesses environmental impacts of likely socioeconomic events or trends, and possible policy responses to perceived environmental changes, such as riparian buffer zones, maximum clearcut size regulations, and use value taxation programs.

3:00 - 3:50 Session 9 & 10 Karanfil or Baker

Session 9
Dr. Tanju Karanfil, *Associate Professor*
Department of Environmental Engineering and Science
Clemson University

Activated Carbon Surfaces: Tailoring for Water, Wastewater and Hazardous Waste Treatment

For many years, activated carbon adsorption has been used to remove a broad range of organic pollutants for water and wastewater treatment. The greatest challenge to elucidate the limits of activated carbon applications in environmental treatment systems is to accurately understand the impacts of "system heterogeneity" on the adsorption process. This project provides an understanding of interactions between carbon surfaces and priority pollutants or natural organic matter that serve as precursor for disinfection by-products. Such understanding will be important for developing novel activated carbons that are effective in meeting increasingly stringent water quality standards.

Session 10
Dr. Patrick Baker
Department of Fisheries and Aquatic Sciences
University of Florida

Exotic Mussel Invades the Southeast: Biopollution by the Green Mussel, *Perna Viridis*

The green mussel, *Perna Viridis*, is an aquatic exotic species discovered clogging cooling water intakes at several power plants in Tampa Bay, Florida, during the summer of 1999. Exotic species, such as the green mussel, are a concern because they are capable of out-competing native species, introducing diseases to native stocks, clogging water intake pipes, and blanketing dock and bridge pilings. This research is focused on assessing and predicting the green mussel's dispersal potential and its impact on fouling communities, native species, and phytoplankton communities. The results of this research should allow resource managers to predict the spread and severity of green mussel infestations.

4:00 - 4:50	Session 11 & 12	Weinberg or Vasu

Session 11
Dr. Howard Weinberg, *Assistant Professor*
Department of Environmental Sciences and Engineering
University of North Carolina

Downstream Impacts from Pharmaceutical Drugs and By-products: Impacts on Drinking Water Treatment Facilities

This research examines whether residual pharmaceutical drugs and by-products contained in municipal wastewater discharges, occuring upstream of drinking water treatment plant intakes, can be transported into drinking water treatment plants. If residual pharmaceuticals are transported into drinking water plants, do conventional drinking water treatment processes effectively remove all pharmaceutical-related residues associated with municipal wastewater discharges? The research involves methods development and monitoring for low concentrations of commonly used antibiotics, blood lipid regulators, anti-inflammatories, beta blockers, hormone therapy drugs, and diagnostic chemicals in upstream wastewater discharges, downstream raw water feeds into drinking-water plant intakes, and treated water from various treatment processes.

Session 12
Dr. Michael Lee Vasu, *Assistant Dean*
Department of Information Technology and E-Learning
North Carolina State University

Evaluating the Dissemination and Impact of Toxics Release Inventory Data

This research empirically assesses the extent to which people are aware of Toxics Release Inventory (TRI) data and what behaviors that this information produces. According to EPA, the cost of TRI reporting exceeds $500 million annually (and industry groups claim this is a gross underestimate). If in fact TRI data are not being absorbed and acted upon by the public, this is important for policy-makers to know in evaluating not only proposals for expanding the program, but also the value of the existing program versus other policy alternatives. The research is based on a three-phase survey of 600 citizens in Baltimore, Maryland and Wake County North Carolina, designed to measure the extent of public awareness of TRI information.

Seminar Specifics

For more information on this seminar contact
Beth Walls at 404-562-8309 or
Estella Waldman at 202-564-6836

Date: Wednesday, September 10, 2003

Time: 8:30 a.m. - 5:00 p.m.

Location: US EPA Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, S.W.
Atlanta, GA 30303-8960

For more information and directions to
US EPA Region 4 office in Atlanta, please visit:

www.epa.gov/region4

Seminar Notes

US EPA Region 4
61 Forsyth Street, S.W.
Atlanta, GA 30303-8960

Official Business
Penalty for Private Use $300
An Equal Opportunity Employer

Wednesday, September 10, 2003 • 8:30 a.m. - 5:00 p.m.
US EPA Region 4 Office (Sam Nunn Atlanta Federal Center)
For more information and directions to US EPA's regional office in Atlanta, please visit: www.epa.gov/region4